MARYLAND

PUBLIC HEALTH IN WORCESTER COUNTY

PUBLIC HEALTH IN WORCESTER COUNTY, MARYLAND

Report of a
Public Health Survey
Conducted by
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and
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with the cooperation
of
The Maryland State Department of Health
and
The Maryland Tuberculosis Association

1940

Preface

In the appraisal of the public health program of Worcester County, certain features and resources as well as special problems which have impressed the survey staff, may be cited at the outset of our detailed report, as follows:

Strong Points, Assets

1. Administration by County Commissioners who are interested in public health.

2. Fairly prosperous agricultural area with a reasonably high tax valuation in comparison with rural counties of the United States.

3. Trained and energetic full-time health officer with a loyal staff.

4. Considerable assistance rendered by the State Department of Health, although increased responsibility should gradually be assumed by the County.

5. Important provisions for the sanitation of the environment, as follows:

   a. Pasteurization of practically all the milk used in Ocean City;

   b. Chlorinated water supplied in Pocomoke City;

   c. Effective sewage disposal plant in Berlin;

   d. Federal inspection of most of the meat sold in the County.

6. Conduct of a pneumonia control program.

7. Well organized and administered program for the control of syphilis and gonorrhea, although the latter should be stressed more than at present.

8. Increasing interest in tuberculosis control with growing support of Christmas Seal Sale conducted by the County Tuberculosis Association with the assistance of the Maryland Tuberculosis Association. Good tuberculosis clinic service, possibly needing extension.

9. A newly organized County Public Health Association, and several Parent-Teacher Associations, and generally good cooperation from physicians and dentists practicing in the County.

10. Fairly good provision for prenatal care service.

11. Many excellent school buildings, although lighting facilities need study.

12. Gradually developing program for community health instruction.

13. Excellent cooperation between the school department, the welfare department, and the health department.

14. Good provision for care of crippled children through the State Department of Health, with cooperation available from the Maryland League for Crippled Children.

15. Gratifying progress in the promotion of public health in recent years.

Weaker Points - Liabilities

1. Fairly large proportion of the population over 45 years of age and high Negro population; excessive infant mortality rate (coupled with high birth rate), tuberculosis and typhoid mortality rates.

2. Lack of chlorination of public water supplies, except in Pocomoke; existence of many private water supplies which present potential hazards.

3. Need for treatment of sewage at Snow Hill and Pocomoke City and for more effective treatment measures at Ocean City.

4. Existence of many insanitary privies and of other problems of general sanitation.

5. Inadequate provision for supervision of food handling establishments.

6. Low proportion of pasteurized milk used in most areas in the County.

7. Low proportion of preschool children protected from diphtheria.

8. High incidence of cases of tuberculosis associated with complex social problems.

9. Need for earlier discovery and treatment of cases of syphilis, especially of instances of the disease among prenatal cases.

10. Need for more comprehensive program of child health conferences.

11. Incomplete school health service program.

12. Delay and difficulty at times in securing medical and hospital care of needy patients including colored, especially in securing hospital care when needed for obstetrical and other types of cases.

13. Lack of provision for bedside nursing service.

14. Shortage of trained public health nurses.

15. Lack of an experienced public health nursing supervisor.

APPRAISAL SCORE FOR PUBLIC HEALTH SERVICES

WORCESTER COUNTY, MARYLAND, 1939

Sections	Percentage Attainment
Vital Statistics	80
Communicable disease control	60
Syphilis and gonorrhea control	63
Tuberculosis control	74
Maternity hygiene	69
Infant and preschool hygiene	45
School hygiene	30
General sanitation	45
Food and milk control	51
Total, all sections	52

Major Recommendations

In considering the future development of the public health program in Worcester County during the next five years, the following major recommendations are suggested:

1. That early provision be made for the employment of a well trained and experienced public health nursing supervisor.

2. That special effort, as outlined in this report, be directed to the reduction of the excessive morbidity and death rates from tuberculosis and typhoid, as well as from diarrhea and enteritis and other conditions related to the high infant mortality.

3. That as emphasized in the report, the program of sanitation and food control be gradually strengthened and include the stimulation of the use of pasteurized milk.

4. That consideration be given to the appointment of a health education supervisor to work under a joint program to be developed by the County Health Department, the County Department of Education, and the County Tuberculosis Association.

5. That as early as possible more adequate housing facilities for the health department be provided, including the establishment of central headquarters on a rent-free basis by the County at Snow Hill.

Origin and Purpose of Survey. The public health survey of Worcester County was conducted at the request of the County Health Officer and the County Commissioners, with the approval and full cooperation of the Maryland State Board of Health. The appraisal was launched early in June and completed in September, 1940. Most of the data regarding services are for the year 1939, although the births, deaths and cases of diseases reported in the County have been analyzed for several years in order to determine general trends.

An effort has been made to ascertain outstanding characteristics and circumstances which bear upon the health of the population, to determine the status of health conditions in the population, and to obtain a reasonably accurate picture of health services performed in the County as evidenced by selected typical activities. The chief purpose of the study has been to make an inventory of existing problems, resources and services as a basis for considering plans for future development during the next five years.

We wish to express our appreciation of the valuable cooperation received from many individuals and organizations in the County and in the State and to express the hope that this survey and report may be helpful in future program planning.

General Characteristics

Worcester County, located on the Eastern Shore of Maryland, consists of four incorporated communities besides a large unincorporated area. The thirteenth to be formed in Maryland, the County was established as a governmental unit in 1742 and was named after the Earl of Worcester. It is bounded on the north by Sussex County, Delaware, on the east by the Atlantic Ocean, on the south by Accomac County, Virginia, and on the west by Somerset and Wicomico Counties. The surface of the county is flat, has an area of 491.5 square miles, and nearly all lies within 40 feet of sea level.

Aside from the Pocomoke River, which crosses the western half of the county and forms part of its western boundary, the surface streams are few in number and small in size. The Pocomoke is sluggish, full of suspended and vegetable matter and partially tidal, and furnishes neither water power nor potable waters. Most of the smaller streams in the county are tidal estuaries and likewise unsuitable for domestic use.

The mean annual temperature at Snow Hill, the county town, is 58°F., and the annual precipitation is about 36 inches.

Worcester County is served by the Delmarva Division of the Pennsylvania Railroad, and is crossed from north to south by Federal Highway No. 13. There are no commercial airlines operating in the district.

Financial Factors: Affairs of the county are administered by a Board of County Commissioners of three members who also serve as the Board of Health. In 1939, the per capita tax valuation was approximately $1016. The tax levy in that year amounted to $1.25 on each one hundred dollars of property subject to taxation for county purposes, and to $.2335 on each one hundred dollars of property subject to taxation for State purposes, making a total of $1.4835. On the basis of income derived from taxes, appropriations amounted to $315,829 of which $5950 or 1.9 percent were appropriated for the health department. The approproation for the health department was approximately one-half of the amount appropriated for the care of the physically and mentally ill patients in the county. As another index of economic status,* it is noted that on the first of January, 1940, a little over one-quarter of the households were equipped with telephones, there being 1957 telephones in the county.

Professional Services. There are no hospitals in the county, patients needing hospital care being taken usually to Salisbury or to Baltimore. There are 13 resident physicians, 7 dentists, and one nurse registered or licensed to practice in the county. Several physicians in adjoining counties or state practice in the county. There are perhaps half a dozen practical nurses with either no or little train-

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* Some 450 families receive Old Age Assistance averaging $15 per month, while 118 families receive Aid for Dependent Children for 279 children; or about 3.7 percent of the children under 16 receive some form of relief aid. Eleven persons receive Aid for the Blind.

ing in nursing. There seems to be a serious problem related to the provision promptly of medical and hospital services for needy cases, especially for colored persons.

The People

The population of the county in 1930 was 21,624, of whom 31 percent were colored. The population, showing only a slight increase during the past four decades, is largely native-born as shown by the following: Native-born white 68.4 percent; foreign-born white 0.6 percent, and Negro 31.0 percent. The age distribution in comparison with that for Maryland and for the United States as a whole was as follows in 1930 -

Percentage Age Distribution, 1930

Age Group	Worcester County	Maryland	U.S.Total	U.S.Rural
Under 1 year	1.7	1.6	1.8	2.1
Under 5 years	9.1	8.9	9.3	10.8
5 - 9	10.9	10.0	10.3	11.9
10 - 14	11.0	9.4	9.8	11.2
15 - 24	17.5	17.8	18.3	18.6
25 - 34	12.5	15.7	15.4	13.0
35 - 44	12.2	14.2	14.0	12.1
45 - 64	18.9	18.1	17.4	16.6
65 and over	7.9	5.9	5.5	5.8
Total	100.0	100.0	100.0	100.0

Source: U.S. Bureau of the Census; Population, Vol.III, 1930 Census

From the above data it is seen that the county, for several disease conditions, has a less favorable age distribution than the state with a slightly larger proportion than the state under 15 years of age and a much larger proportion than the state and the United States over 45 years of age. The large proportion of Negro population is likely to ing nursing. There seems to be a serious problem related to the provision [illegible] of medical and hospital services for needy cases, especially [illegible] persons.

The People

The population of the county in 1930 was 21,[illegible], of which [illegible] percent were colored. The population, showing only a slight increase during the past four decades, is largely native-born as shown by the following: [illegible] percent, [illegible] percent, and [illegible] 0.3 percent. The age distribution in comparison with that for [illegible] and for the United States as a whole was as follows in 1930 -

Percentage Age Distribution, 1930				
Age Group	[illegible] County	[illegible]	[illegible]	U.S. Total
Under 1 year	1.7	[illegible]	[illegible]	[illegible]
Under 5 years	9.2	[illegible]	[illegible]	[illegible]
5 - 9	10.[illegible]	[illegible]	[illegible]	[illegible]
10 - 14	11.[illegible]	[illegible]	[illegible]	11.[illegible]
15 - 19	11.[illegible]	1[illegible]	[illegible]	[illegible]
20 - 24	10.[illegible]	[illegible]	[illegible]	[illegible]
25 - 34	13.[illegible]	[illegible]	[illegible]	[illegible]
35 - 44	[illegible]	[illegible]	[illegible]	[illegible]
45 and over	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]
Source: [illegible]				

[illegible]

be associated with pupils health problems of special importance to be discussed later.

The occupational status of the population in 1930, which was fairly comparable with that at present, is shown in the following tabulation adapted from Volume III of the 1930 Census -

Percentage Distribution of Gainfully Occupied Persons		
Industries	Male	Female
Agriculture	52.3	12.3
Forestry and fishing	4.8	0.1
Extraction of minerals	0.01	0.0
Manufacturing and mechanical	16.4	15.3
Transportation and communication	7.4	2.7
Trade	10.2	10.4
Public Service	1.1	0.6
Professional Service	2.3	15.9
Domestic and personal	2.3	41.8
Not specified	3.2	0.9
Total	100.0	100.0

From the above tabulation, it is noted that this is largely an agricultural area,* thus confirming the impression which one obtains from driving over the county and observing many apparently prosperous farms and attractive homes.

Public Health Administration

Public health work in Worcester County is carried on largely by the County Health Department. The health officer is appointed on a full-time basis by the County Commissioners with the approval of the State Board of Health. The county is fortunate in having as health officer a physician who is also a graduate in public health and otherwise ably equipped to serve

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* 10,213 persons live on 2103 farms; about two-thirds of the farms are operated by their owners. There are some 88,000 acres in cultivation, 104,000 in pasture and woods. Thirty-five farmers have herds of cattle.

in this important position. The staff consists of 4 clinic or conference physicians, part-time, a part-time dentist, 4 public health nurses, a sanitary inspector, one clerk, full-time, and one clerk, part-time. The budget of the health department in 1939 was about one dollar and a quarter per capita, representing an increase of 17 cents per capita over the previous year.

The State Board of Health, through several staff members, renders advisory and educational services and provides considerable financial aid (84 percent in 1938; 80 percent in 1939) from state and federal funds, the latter being derived from the U.S. Public Health Service and the U.S. Children's Bureau. The Maryland Tuberculosis Association and The Maryland Society for Mental Hygiene are the principle state voluntary agencies rendering services in the county. A County Public Health Association and a County Tuberculosis Association affiliated with the Maryland Tuberculosis Association have recently been organized. The County Chapter of the American Red Cross devotes its activities largely to first aid instruction and relief, with classes conducted a year ago in home hygiene and care of the sick. There are several Parent-Teacher Associations interested in the public health program, besides a Home Demonstration Agent.

in this important position. The staff consists of 4 clinic or conference physicians, part-time, 1 part-time dentist, 4 public health nurses, a sanitary inspector, one clerk, full-time, and one clerk, part-time. The budget of the health department in 1937 was about one dollar and a quarter per capita, an increase of 15 cents per capita over the previous year.

The [illegible] Board of Health, through several staff members, [illegible] (federal) aid (34 percent in 1937; 42 percent in 1936) from state and federal funds, the latter being derived from the U.S. Public Health Service and the U.S. Children's Bureau. The [illegible] Tuberculosis Association [illegible]. The Maryland Society for Mental Hygiene has the only [illegible] in the county. A county public health [illegible] and a county [illegible] affiliated with the Maryland Tuberculosis Association have recently been organized. The County Chapter of the American Red Cross devotes its activities largely to first aid instruction and relief, with [illegible] appointed a year ago in home hygiene and care of the sick. There are several Parent-Teacher Associations interested in the public health program, [illegible].

Approximate Expenditures for Worcester County, Fiscal Year 1938, 1939

	1938	1939	Source of Funds, 1939			
			Local	State	Federal	Voluntary
Salaries	$12,536	$15,136	$3650	$4684	$6622	$180
Travel and Transportation	3,006	3,273	800	1815	658	-
Office & Clinic	2,016	1,963	484	1479	-	-
Clinic supplies and equipment	1,253	975	-	975	-	-
Vaccine, Toxoid and Sera	373	271	-	271	-	-
Dental Clinics	775	725	650	75	-	-
Tuberculosis Control	191	600	-	-	-	600
Crippled Children						
Hospitalization	2,844	3,803	-	-	3803	-
Other	168	116	-	-	116	-
Miscellaneous	120	241	-	241	-	-
Registration of Vital Statistics	240	239	239	-	-	-
Total	$23,522	$27,342	$5823*	$9540	$11,199	$780
1939	-	-	21.3	34.9	40.9	2.9
Percentage 1938	-	-	14.4	40.9	43.6	1.1
Per Capita	$1.09	$1.26	-	-	-	-

* Increase of $2423 over previous year.

Vital Statistics

During the year 1939, there were 413 live births, 18 stillbirths, and 315 deaths from all causes reported for Worcester County. A comparison of selected rates for the County and the State for the year is of interest -

Birth and Death Rates from Selected Causes, 1939

	Worcester County			Maryland (Provisional)		
	White	Colored	Total	White	Colored	Total
Birth Rate*	16.2	25.6	19.1	14.9	20.1	15.8
Stillbirth Rate**	24.9	69.8	43.6	39.5	74.2	47.0
General Death Rate*	12.8	18.5	14.6	10.9	15.1	11.6
Infant Mortality Rate**	74.7	157.0	108.9	40.5	84.1	50.0
Tuberculosis Death Rate***	73.8	134.1	92.5	44.4	207.1	72.2
Typhoid Death Rate***	0	29.8	9.2	0.6	2.9	1.0
* Per 1,000 population. ** Per 1,000 live births. *** Per 100,000 population.						

From the above data, chosen as indices, it appears that birth rates and death rates from several important causes in the county are much higher than the average for the state, for both white and colored persons. Particularly striking are the infant mortality and tuberculosis death rates.

The mortality experience for selected causes for the year 1939 is compared with a five year average, and the rates are given for the five-year period in the following table -

Total Deaths from Selected Causes

Cause	Year 1939	Period 1935-1939		
		Annual Average	Total	Rate*
Typhoid and Paratyphoid	2	2.4	12	11.1
Scarlet Fever	0	0.6	3	2.8
Whooping cough	0	1.8	14	8.3
Diphtheria	0	0.2	1	0.9
Influenza	7	5.4	27	25.0
Tuberculosis	20	27.8	139	128.6
Syphilis	1	3.8	19	17.6
Cancer	25	22.8	119	105.4
Heart Disease	61	52.6	265	243.2
Pneumonia	15	27.6	138	127.6
Diarrhea and enteritis	10	10.4	52	48.1
Puerperal causes	1	4.0	20	10.5**
Automobile Accidents	4	8.4	42	38.8

* Per 100,000 population.
** Per 1,000 live births.

In contrast with the high rates from certain important causes, emphasis should be given to the fact that there have been no cases nor deaths in the county from smallpox in many years, and only one death from diphtheria (1938) in the past five years. Active measures of vaccination and immunization have been taken to protect the public from these unnecessary diseases, and the results have been commendable.

The registration and analysis of records of births and deaths by the County Health Officer and the Bureau of Vital Statistics of the State Board of Health conform in general to modern practices. Pressure of many duties prevents the health officer and his staff from carrying out routinely certain of the tabulations and graphic presentations of data which would prove helpful currently in analyzing the local problems for administrative purposes.

Environmental Sanitation

Health departments have a primary responsibility in carrying out one of the principal functions of government - the provisions of a safe and healthy environment. Many communicable diseases may be largely controlled by applying proper technics to eliminate environmental hazards. For example, the control of typhoid fever, the dysenteries, malaria, septic sore throat, undulant fever, and trichinosis is largely a problem in environmental sanitation. Other diseases also may be prevented in part at least by the wide application of sanitary measures.

One of the most sensitive indices of the health status of a community is its infant mortality rate. When diarrhea and enteritis is a frequent cause of death, it is almost axiomatic that serious environmental hazards exist.

Typhoid fever and bacillary dysentery also occur most frequently in communities which have difficult environmental problems. The elimination of typhoid fever has in large measure been accomplished in those districts where there is adequate control over water, food and milk supplies coupled with systematic measures for the discovery and supervision of carriers.

Control of the environment is difficult to obtain in a rural area where the population is widely scattered. However, it is possible to achieve a considerable measure of success if a sufficient staff of trained workers is provided and if all available facilities are properly utilized for the benefit of the entire community.

CASES REPORTED OF
TYPHOID FEVER
PER 100,000 POPULATION
WORCESTER COUNTY
AND
STATE OF MARYLAND,
1919 to 1939 Inclusive.

◆

KEY

WORCESTER COUNTY
STATE OF MARYLAND

1940

In Worcester County there are several indices which point to a need for more emphasis on the sanitation program. The relatively high typhoid fever mortality rate (11.1 per 100,000 population compared with a state rate of 1.8) for the five-year period ending in 1939, and the high diarrhea and enteritis death rate for the same period both indicate a need for careful analysis of the sanitation problems in the county. In an appraisal of this type, it is impossible to discover the exact reasons for such unfavorable rates as have long been experienced locally, but careful epidemiological study of all cases of enteric disease should reveal much of interest for local control officials.

On the basis of the American Public Health Association Appraisal Form, Worcester County scores 45% for general sanitation activities including water supply and wastes disposal, and 51% for food and milk sanitation. With slight revision of the sanitarian's program and after making a few relatively inexpensive capital improvements, these scores could be raised to 78% and 72% respectively.

For this county, the problems of sanitation may be advantageously divided into four large groups: (1) water supply and waste disposal; (2) domestic, school, and recreational sanitation; (3) food, milk, and shellfish sanitation; and (4) industrial hygiene. That there must be considerable overlapping from one group to another is obvious, but for purposes of discussion these arbitrary separations will suffice.

Water Supply. There are four public water supplies in the county serving 87% of the urban residents living in Berlin, Ocean City, Pocomoke City and Snow Hill. All of the supplies are derived from groundwater sources. The only supply that is chlorinated is that serving Pocomoke City.

Most sanitary engineers and health officers believe that every public water supply should be properly protected against contamination by the use of chlorination. There are two advantages to the chlorine-treatment of water: (1) any pollution that may exist at the source is rendered harmless; and (2) there is a safety factor present in the distribution system in case back-siphonage through a faulty plumbing fixture should cause contamination. There are in reality no serious disadvantages or objections to the use of chlorine for treating public water supplies.

It is also widely believed that no home in a community served by a public water supply should be permitted to use water coming from a private source. Wherever possible, there should be full utilization of the public supply by all residents of the district.

It is therefore suggested: (1) that the Mayor and Council of Berlin, Ocean City and Snow Hill, respectively, give early consideration to the need for chlorinating the public water supplies of each of these towns; and (2) that it be required that as soon as practical all residences in communities having public water supplies be required to abandon private supplies and use only water from the urban supply.

One of the most serious defects from the standpoint of water supply in Worcester County is the large number of pitcher pumps which are used by

residents throughout the entire county. Although the pitcher pump may be convenient for the person who uses it, sanitarians recognize the potential hazard of its being primed with polluted water resulting in the contamination of the entire supply.

Whenever new domestic wells are developed in the future, it is suggested that a modern type of pump be installed. There are many such pumps on the market which cost but little more than the pitcher pumps.

Sewage Disposal. All of the towns in Worcester County are sewered, and there are treatment plants at Berlin and Ocean City. The needs for urban sewage are reasonably well met, but there are relatively serious defects in the ultimate disposal of the sewage from all communities except Berlin.

At Pocomoke City one of the sanitary sewers has its outfall in a creek which empties into the Potomac River at a point near the center of town and upstreams from it; most of the outfalls empty directly into the Pocomoke River. Septic conditions prevail at the sewer outlets, and there is abundant evidence that a treatment plant is needed. Many disease hazards exist where raw sewage discharges into a brook, river or harbor in addition to other nuisances created.

At Snow Hill, the sewer outfall is located where it, also, is a nuisance. The available dilution water is relatively inadequate, and indications are that treatment should be provided at an early date.

The Ocean City sewage treatment plant is designed to comminute solids and chlorinate the effluent which ultimately reaches "The Inlet" on the South side of the town. Unfortunately, the chlorinator works only

when the sewage pumps are operating with the result that the chlorine detention period is relatively brief (5 or 6 minutes). This means that there probably is no sterilization of the effluent.

The Berlin sewage treatment plant lacks toilet and lavatory facilities; the need for handwashing equipment at a sewage works is obvious. The Resident Engineer at Salisbury, representing the State Department of Health, has already brought this defect to the attention of local officials, and it should be corrected as soon as possible.

Despite the nearly universal use of privies for sewage disposal in the smaller communities and rural areas of the County, some places utilize cesspools or septic tanks. The design and construction of satisfactory water-carried sewage disposal units is a technical job, and the requirements in certain sections of the county are particularly exacting. The State Sanitary Engineer is required by law to approve the plans for new installations of sewage disposal units for camps and other public places. Inasmuch as the more difficult problems are often associated with tourist places, it is suggested that the County Health Department require that builders submit plans to the state office for approval before construction begins.

Some years ago a successful privy program was conducted in Worcester County. There is again a real need for a community sanitation program in the county. Although W.P.A. labor is not now available to resume operations on the community sanitation project, it may be possible to re-open the project when labor is to be had once more, and a representative of the United States Public Health Service has been detailed to Maryland when the sewage pumps are operating with the result that the chlorine contact period is relatively short (5 or 6 minutes). This means that there probably is no sterilization of the effluent.

The Berlin sewage treatment plant lacks toilet and lavatory facilities; the need for handwashing equipment at a sewage works is obvious. The Resident Engineer at Salisbury, representing the State Department of Health, has already brought this defect to the attention of local officials, and it should be corrected as soon as possible.

Despite the nearly universal use of privies for sewage disposal in the smaller communities and rural areas of the County, some places utilize cesspools or septic tanks. The location and construction of satisfactory water-carried sewage disposal units is a technical job, and the requirements in certain sections of the county are particularly exacting. The State Sanitary Engineer is required by law to approve the plans for new installations of sewage disposal units for camps and other public places. Inasmuch as the more difficult problems are often associated with private places, it is suggested that the County Health Department require that builders submit plans to the state office for approval before construction begins.

Some years ago a successful privy program was conducted in Worcester County. There is again a real need for a community sanitation program in the county. Although W.P.A. labor is not now available to resume operations on the community sanitation project, it may be possible to resume the project when labor is to be had once more, and a recommendation of the United States Public Health Service has been [illegible] to assist in developing local programs. A successful privy-building campaign might well pay dividends by lowering the infant mortality rate, and reducing the number of typhoid cases.

The disposal of sewage under a scavenger system at Taylor's Landing and George's Island Landing seems to be the most logical method of handling those local problems. The health department might designate sites for the disposal of the excreta collected by the scavenger.

In general, the sewage disposal problem resolves itself into three stages: (1) that pertaining to urban sewerage and sewage disposal; (2) the problem of rural disposal units; and (3) the few special problems such as exist in connection with the shellfish industry. The State Department of Health is best equipped to direct the first phase, and can furnish important assistance to the local unit in carrying out the details of the second and third phases.

Refuse Disposal. Refuse consists of garbage, rubbish and ashes, and is frequently offensive. The disposal of refuse is a problem in municipal housekeeping which can most frequently be solved by the department of public works or by the town engineer. The disposal problem is frequently most acute in small incorporated communities which have plenty of available space for disposal. The reasons for this include: (1) high unit cost of handling relatively small amountsof refuse; (2) lack of administrative (or service) departments in the local government; and (3) reluctance of local officials to invade a new field.

There are two plans for providing adequate refuse collection services in small communities: (1) directly by the town; or (2) privately

under contract with the town. In many respects the second alternative is preferable in that it frequently costs the community less money. Suitable provisions for equipment and mode of handling should be set up in the contract, and the collector should be required to adhere closely to these requirements. Trucks with non-leaking bodies are essential for carting garbage.

Insofar as the ultimate disposal of refuse from towns is concerned, probably dumping of rubbish and ashes, and hog-feeding of garbage provide the cheapest available methods. While incineration may be more sanitary if a proper incinerator with adequate personnel is provided, the process is likely to be much more expensive. Dumps should be located where they will not be nuisances, and they must be properly maintained. This usually means that they should be well away from nearby homes, on land that is not likely to be used for building purposes. Often land-fill can be used for eliminating mosquito-breeding places. Hog farms should be well drained; the garbage should be cooked before being fed; concrete feeding platforms should be provided; hogs should be vaccinated against hog cholera; and there should be sufficient piped water available for washing down all buildings associated with the process.

The Worcester County Health Department has advised local officials from time to time concerning the collection and disposal of refuse despite the fact that the problem has few health implications. The advice which has been given has been sound, and, if followed, the problem would almost inevitably work itself out without further nuisance. For reference, the

note prepared by the County Health Officer and addressed to the Mayor of Ocean City on January 11, 1939, covers the essential points in a satisfactory program for any town in Worcester County.

General Sanitation. The sanitarian must always balance costs against results to be obtained. This is obviously good business, requiring careful planning, and involving consideration of all environmental problems in the community. There are numerous problems of general sanitation which could be worked out were the necessary funds available. For instance, inadequate water supply and sewage disposal facilities for houses within areas serviced by public water supplies and sewers are quite untenable, but must exist in many instances because the costs of providing satisfactory facilities are in excess of the value of the property involved. Such a situation, however, may indicate the need of a housing program.

Residential Sanitation. In Worcester County there are problems of residential and school sanitation which require careful consideration. One of the more important problems in home sanitation has already been pointed out - the need for a privy sanitation program. Many homes in Pocomoke City, as well as in the smaller communities of the area, are badly in need of decent sanitary facilities. Primarily it is a need for sewage disposal units, but the extensive use of pitcher pumps is fraught with considerable danger to the health of families throughout the county. There is also a problem related to the lack of water supplies of any kind for many homes except from a "community" pump.

During 1939 the County Health Department made 172 inspections of private premises in the County.* This represents about 3.4 visits per week spent on residential sanitation. It is questionable whether enough time is spent on this phase of the work when the magnitude of the problem is considered. At least one-third of the time of the sanitarian should be spent on sanitary problems until some of the more serious conditions are improved.

School Sanitation. The Worcester County Health Department has not taken an active interest in school sanitation heretofore, although nearly every school was provided with sanitary privies during the last community sanitation program. Present plans include a thorough inspection of every school in the county to be made during the Autumn of 1940, and routine supervision of all buildings thereafter. It would be desirable to have water samples taken annually at all schools not served by public supplies. Pitcher pump installations at schools should be replaced by more satisfactory equipment.

The abandonment of many one-room schools and the construction of modern, well-equipped consolidated schools throughout the county has been of benefit from the sanitary standpoint. Extension of this program would eliminate many of the less satisfactory buildings, and result in giving every Worcester County school child the opportunity of practicing health teachings during school hours.

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* In addition, 87 nuisance and garbage complaints were investigated.

Camp Sanitation. There are numerous camp sites in the county, and regular inspections of these places are made by the sanitary inspector. During 1939, he visited 9 camp sites 48 times for various purposes.

All camps are licensed to operate, by the State Department of Health, only after they have been inspected and approved by the county sanitary officer. This is a sound policy which should be continued.

It will be helpful locally if the sanitarian requires contractors to submit their plans for camp sewage disposal systems to the Bureau of Sanitary Engineering of the State Health Department for approval before construction begins. This policy, if followed routinely, would in large measure avoid creating such difficulties (e.g. drainage problems) as have arisen in the lowlands north of Ocean City.

Nuisances and Complaints. It has frequently been found useful to maintain spot-maps in health department offices to record the location of complaints and of special public health problems. The sanitarian, by appropriate use of this device, may often save considerable time and effort by making routine inspections and eliminating the causes of complaints before the nuisance becomes serious.

Food Sanitation

Although health departments everywhere feel a responsibility in supervising the food industry, the problems are so diverse and so highly technical that most organizations for various reasons have been unable to

devise a soundly conceived plan of food sanitation. Obviously routine inspections of food establishments, although helpful, cannot insure the safety of products coming from these places. Too many people and too many operations are involved in the food industry to allow of such a simple solution as would obtain under mere routine inspection.

Possibly the most important thing that the average health department can do at the present time in this field is to secure the application of the principles of satisfactory food handling wherever possible. This has been accomplished reasonably well in some areas through training programs for food handlers conducted by health departments.

In Worcester County, agriculture and the canning industry play important roles in the economic life of the community. There are health problems of considerable magnitude associated with each, and the County Health Department has the responsibility of providing supervision over those aspects which affect the welfare of the consumer.

One of the important health aspects of food-harvesting relates to sewage disposal for the itinerant laborers employed in the fields during the various seasons. Provision for the disposal of body wastes from all field-workers is essential. Either permanent or portable privies should be provided at convenient locations in those areas where large numbers of workers are employed.

The inspection of the 17 canneries, formerly carried out by the State Department of Health which licenses these places, is a duty of the local sanitary officer.

The shellfish industry, which presents many interesting public health problems, is discussed at length elsewhere in this report.

Eating Establishments. A program of licensing for eating establishments throughout the county is needed. A satisfactory start has been made at Ocean City, but further legislation must be enacted before a county-wide plan can operate.

The interest shown by the local health department in eating and drinking utensil sanitization is commendable, although in some of the communities the major need is for additional emphasis on the basic sanitation of eating places. For instance, primitive means for sewage disposal were observed in one or two places in Pocomoke City, and the indications are that similar conditions exist elsewhere in the county.

There are state laws covering the cleansing of food containers so that unsatisfactory conditions need not necessarily exist in any community.* A system of routine inspections of all eating establishments with emphasis on the proper storing and handling of food, the provision of adequate toilet and lavatory facilities, and the cleanliness of equipment, should prove to be of considerable value in Worcester County.

There were 410 inspections of 74 eating establishments in the county during 1939. There are many more eating places which are not subject to inspection although they should be included in the list.

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* Adopted July 15, 1938.

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Shellfish Sanitation

In recent years the United States Public Health Service in cooperation with the Food and Drug Administration has supervised the shellfish industry insofar as interstate commerce in oysters is concerned. The work done by the Service has consisted essentially of setting standards and accepting certification by State health departments of shellfish shippers from the various states. For instance, the Service has set certain standards of purity for waters from which oysters may be taken for shipment in interstate commerce. Local health officials are required to certify shippers on the basis of these standards. There are spot checks made by engineers from the U. S. Public Health Service from time to time, and standards are constantly being raised.

Because of the inherent dangers existing in untreated raw oysters, sanitarians have searched for a method of controlling this hazard. A few years ago a scheme for purifying oysters was tried on a laboratory scale, and the experiment was so successful that large-scale conditioning plants using chlorine have been built in England, and in certain American states. In nearly every instance, the plants have been constructed in order to purify shellfish coming from heavily polluted waters. The success of this purification scheme has been demonstrated both here and abroad; few complaints have been registered once the plants have been put in operation; and veteran oystermen realize the advertising value of this protective measure.

Worcester County Shellfish. There are approximately 22,000 barrels of oysters shipped from Stockton and Girdletree annually, and an additional 4,500 bags of clams are sent out each year. These shipments represent a large industry, and Sinepuxent Bay Oysters are known throughout the East.

The shellfish harvested at Stockton and Girdletree are taken from clean waters, covering muddy bottoms, are allowed to stand on floats until the shells are clean, and then are packed ready for shipment. There are a few opportunities for contamination of these shellfish, and these hazards should not be minimized.

Among the dangers are: (1) boating over or adjacent to the beds; (2) contamination from land surface wash onto the floats; and (3) handlers who suffer from or are carriers of enteric disease. Each of these hazards potentially exists, and none can be eliminated completely. This is true of the oyster industry everywhere, and is not specific for Worcester County.

Similar hazards exist in the milk industry, and pasteurization has been used to obviate the dangers. Chlorination of oysters is similar to pasteurization of milk: it renders the product safe without altering its essential characteristics.

The Public Health Service has tried informally to interest the local oystermen enough to agree to the construction of a conditioning plant somewhere in the county, but there has been some hesitancy on the part of the shellfish producers to accept such a new procedure without further study of the effect of conditioning on shell oysters. The Maryland State Department of Health has also advocated a conditioning plant to be built somewhere on the shores of Sinepuxent Bay.

Both of these agencies are familiar with the board aspects of the shellfish sanitation problem, and their advice should be carefully considered. Inasmuch as a definite problem exists in Worcester County, it would seem desirable for the County Commissioners to cooperate with the State Department of Health and the oystermen in building a treatment plamt for washing all oysters sold in interstate commerce. Obviously a central plant, well located, would be more economical to build and operate than a series of smaller installations. The costs of treatment per barrel of oysters are modest, and should not prove to be a burden on the industry. An oyster-borne epidemic traceable to local products would be infinitely more costly.

Supervision. Up until the present, one of the real difficulties of the shellfish sanitation program locally has been the apparent duplication of services reaching the various oystermen. For instance, the local health department has been interested in the health of handlers and has been instrumental in arranging for scavenger services at the waterfront establishments. The Bureau of Sanitary Engineering in the State Department of Health has been studying the waters of Sinepuxent Bay, has discussed a conditioning plant, and has worked with the Public Health Service in connection with the local industry. The Food and Drug Division is interested in the quality of the product, and inspects packing plants as well as the shucking house at Stockton. Finally, the U.S. Public Health Service representatives make periodic inspections which apparently seldom meet with the favor of the local oystermen.

It is questionable whether the Worcester County Health Department should have any routine contact with the industry, and, because of lack of trained personnel for this type of work locally, it is suggested that

the county health unit act only on special occasions as the direct representative of the State Department of Health.*

Milk Sanitation

Milk as one of the most favored foods found in Nature, is potentially one of the most dangerous to the public health. Containing, as it does, most of the dietary essentials of mankind, it is also an excellent medium for the growth of disease-producing bacteria. Hence, it must be handled carefully after being taken from disease-free cows.

Pasteurization has been developed to assist in making milk a safe food to consume. It is not a panacea for the production of dirty milk, nor is it alone a guarantee against infection, but it is a potent weapon to be used against the milk borne diseases. Coupled with careful handling, pasteurization results in a product which is safe for human consumption. None of the important food values of raw milk is destroyed by pasteurization, nor is the taste or appearance of the product altered if the method is correctly applied.

Milk sanitation programs include at least three essential stages: (1) inspection of dairy farms including examinations of animals and of milk handlers; (2) inspection of pasteurizing and bottling plants; and (3) laboratory examination of raw and market milk, and milk products. No satisfactory program of milk control can be arranged unless all of these phases are taken into consideration. One of the administra-

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* This report would be incomplete without reference to the chronic typhoid carrier who periodically works at Stockton. If he refuses to stay away from the industry he might well be institutionalized. He is an excellent reason why the present practice of floating should be abandoned in favor of a treatment plant.

tive problems is to plan a milk sanitation program in which the proper amount of emphasis is given to each aspect.

Worcester County Milk. There were at least 32 dairy farms producing milk for sale in Worcester County during 1939. This group does not include many one- and two-cow dairies operating throughout the county, and over which the health department exercises little control.

All but three of the farms under supervision were visited at least once during the year, and each of 18 farms were inspected at least ten times. It is questionable, especially in view of other pressing inspection problems, if there need be more than semi-annual routine inspections of farms producing milk for pasteurization, yet there were 99 inspections of 10 farms selling their milk to pasteurizing plants during 1939.

There were, in addition, 155 inspections of 22 retail raw milk establishments, or an average of seven visits per farm. However, 10 of these 22 farms had 115 inspections or an average of 11.5 visits per farm, while the remaining 12 farms averaged less than 2 visits for the year. It is believed to be good practice to make an average of 6 visits per year to each raw milk producing farm on a milkshed.

There were 22 inspections made of the two pasteurizing plants in the County, although modern practice calls for weekly inspections of these establishments.

The local sanitarian regularly takes milk samples to the branch laboratory at Salisbury, and duplicate reports are distributed to the various dealers by the inspector. It would save time and effort if these were mailed out from Pocomoke City. Only those reports which indicate serious problems need necessarily be followed up immediately by a special visit of this nature.

During 1939 there were 33 samples of pasteurized milk, 150 of raw milk previous to pasteurization, and 211 samples of retail raw milk examined in the Salisbury laboratory. Indications are that the pasteurized milk in Worcester County is of uniformly satisfactory quality. On the other hand, but 75% of the samples of raw milk met the bacterial standards usually set by health officials for retail raw milk. Apparently the majority of the unsatisfactory samples were taken during the summer, and a frequent source of trouble on some farms was a lack of adequate cooling facilities.

The Raw Milk Problem. Although approximately 100% of the milk going into Ocean City is pasteurized, there is too much raw milk being consumed in Worcester County for the safety of the population from unnecessary diseases which might be spread. Only 50% of the milk sold in Pocomoke City is pasteurized, and less than 5% of that sold in Berlin and Snow Hill has been so treated. Throughout the rest of the county, only raw market milk is available.

The hazards of raw milk are widely known: septic sore throat, diphtheria, scarlet fever, typhoid, and undulant fever are diseases spread by raw milk or milk products. There is much preventable illness, some fatal, each year in this country due to the continued use of a potentially dangerous foodstuff that could be made safe.

Because of the facts cited above, it is suggested that the help of all community organizations be enlisted in stressing the importance of pasteurized milk in order that dealers will be stimulated to invest in pasteurizing equipment and that consumers will desire increasinly to purchase only

pasteurized milk, so that the health of the citizens of Worcester County may be better protected. What is needed more than anything else is a wider understanding by the public of the dangers of raw milk and the advantages of pasteurized products.

The Health Department's Milk Program. Considerable emphasis apparently is placed on routine inspection of farms by the sanitarian. This is essentially non-technical work, and relatively ineffective insofar as the quality of the product is concerned. While routine inspections are necessary, advantage should be taken of the fact that the present county sanitarian has had technical training in dairying. It is suggested, therefore, that, with the cooperation of the Bureau of Laboratories of the State Department of Health, the local department institute a program of field laboratory supervision of pasteurization by making direct microscopic examinations of producers' samples collected at the two pasteurizing plants, and by making routine phosphatase tests on pasteurized milk. Such a plan would be in addition to the present routine sampling procedure which should be continued.

The direct microscopic examination is a rapid test for indicating the quality of raw (or pasteurized) milk. The phosphatase test indicates whether or not milk has been properly pasteurized.

It is suggested that these examinations by the sanitarian be used to guide his inspection procedure. Considerable time may be saved by doing no more than two inspections per year per farm producing milk for pasteurization unless the direct microscopic count indicates a need for special investigation of a certain producer. The total time spent on the additional

laboratory work by the sanitarian should be kept at a minimum, and any time saved through eliminating unnecessary inspections can be used to advantage by increasing the number of visits to pasteurizing plants.

Industrial Hygiene

One of the newer fields of public health, and one which shows considerable promise is industrial hygiene. The control of accidents and diseases caused by exposure to occupational hazards has come to be recognized as an outstanding responsibility of health departments.

Obviously the problems of industrial hygiene are widely diversified, and their solution depends on many factors. In urban areas, exposure to industrial dusts and poisons are of prime importance as causes of disability, but in rural communities the farm accident problem is predominant.

In Worcester County there has been little industrial hygiene work done. Although the health department has many other problems to study, consideration should be given occasionally to the farm accident problem. At present there is no real basis for action, but a study of accident statistics from the county would reveal the extent of the problem and its local characteristics. Possibly an educational program in connection with the County Fair each year would be of benefit to the many agricultural workers in the area.

Control of Diseases

The program of the County Health Department, in addition to the work connected with vital statistics and environmental sanitation previously discussed, includes activities for the control of the acute communicable diseases, syphilis, gonorrhea, and tuberculosis, and the promotion of maternal and child health.

Acute Communicable Diseases. In the performance of his official duties, the health officer acts under authorization of the health laws of the State, or the rules and regulations of the State Board of Health. In addition to the law requiring physicians to report all cases of occupational disease, the rules and regulations of the State Board of Health list 46 notifiable diseases. Provision is also made for communicable diseases not specifically enumerated to be controlled in accordance with orders and directions of the local health officer.

Cases of major communicable diseases are visited by the health officer for the purpose of confirming the diagnosis, of investigating the source of infection, and of instituting measures to prevent further spread of the disease. Epidemiological studies are made of cases of such diseases as typhoid fever, diphthoria, scarlet fever, poliomyelitis, and undulant fever. Cases of communicable diseases are required to be reported by physicians, teachers, neighbors and members of families. Placarding is not done. Efforts are made to safeguard the public from spread of disease through the channels of water and milk supplies.

The prevention of disease is regarded as of outstanding importance in the program of the health department. Through the State Department of Health the County Health Officer is kept informed in regard to the births, deaths, and causes of deaths and sickness throughout the State. He also must be informed at all times of conditions in the County if he and his staff are to keep communicable diseases down to a minimum with the least possible interference with community activities. This is done through his relations with physicians, schools, householders, milk dealers, the press, and the members of the de-

partment. The reporting of communicable diseases has a twofold function: first, to acquaint the health department with the prevalence of the disease, and, second, to enable the department to take such steps in the control and study of the disease as are indicated.

The number of cases of communicable diseases reported to the health department during the past five years is shown below -

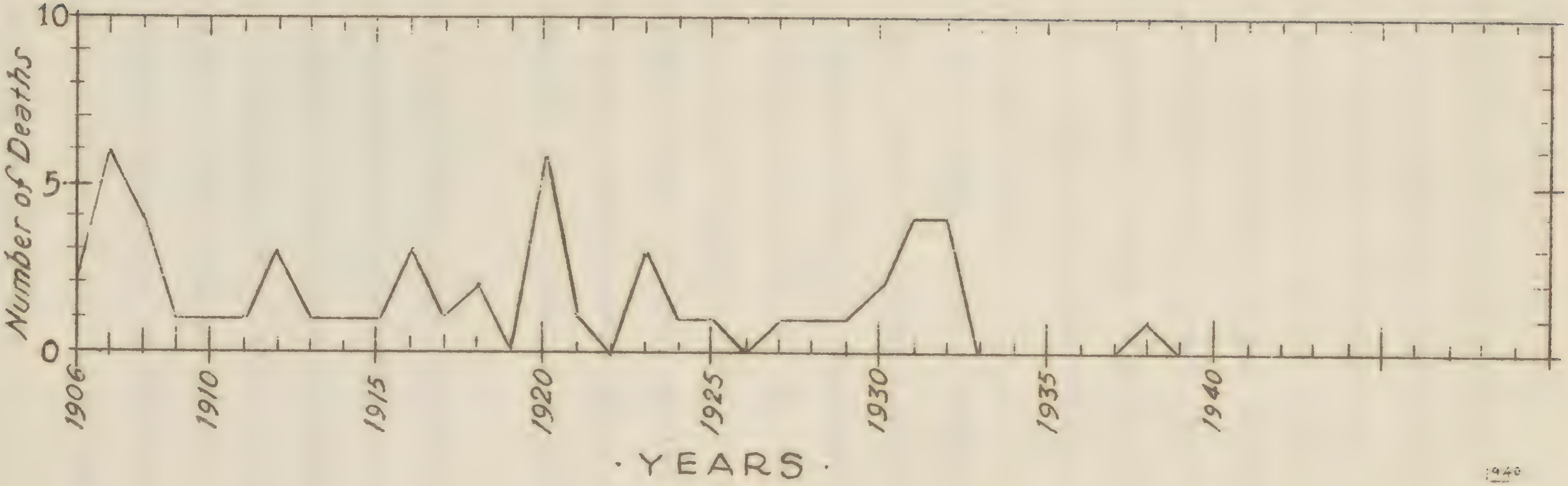
Number of Cases Reported, 1935-1939

Disease	1935	1936	1937	1938	1939	Annual Average
Typhoid & Paratyphoid	20	8	10	11	10	11.8
Measles	8	151	76	23	2	52.0
Scarlet fever	19	57	46	29	54	41.0
Whooping cough	2	22	2	3	9	5.8
Diphtheria	4	0	0	2	1	1.4
Typhus Fever	0	1	0	0	0	0.2
Poliomyelitis	0	0	0	1	0	0.2
Meningitis	0	0	1	1	4	1.2
Ophthalmia Neonatorum	0	0	3	2	1	1.2
Pneumonia	28	45	60	65	58	51.2
Streptococcic sore throat	8	1	1	0	2	2.4

In Worcester County, the completeness of reporting of the more common, and important, communicable diseases, such as typhoid, measles, scarlet fever and whooping cough, falls far short of accepted ratios based on general experience throughout the country.

While there has been only one death from diphtheria in the past five years, and there were no cases reported in 1936 and 1937, there were four cases reported in 1935, two in 1938 and one in 1939. With slightly less than a quarter of the preschool age children protected from this unneccessary disease, the need for active educational measures to stimulate the parents to have their babies and young children immunized is indicated. Although 75 percent of the children in the first and

NUMBER OF DIPHTHERIA DEATHS
WORCESTER COUNTY
1906 to 1939 Incl.



1940

second grades of school, and over 60 percent of all school pupils have been immunized or are not susceptible to the disease as shown by Schick tests, the age group where protective measures are most essential has only been partially reached. While parents should be encouraged to go to their own physicians for such protective measures so far as practicable, experience elsewhere indicates that most of this work must be done by the health department if a sufficiently large proportion of the children, to insure general safety of the public, is to be protected. During 1939, there were 264 children of 5 years of age or younger, besides 306 school pupils given toxoid, in addition to 760 pupils given Schick tests.

Measures for the control of typhoid fever correspond in general with accepted practices. In 1940, a plan was developed whereby typhoid carriers, when discovered, are required to sign an agreement with the health department regarding their occupation and to abide by the instructions of the department regarding their personal hygiene.* There are 4 carriers on the register, one having been found in 1939. Typhoid vaccine is freely available, and 172 persons were given typhoid inoculations in 1939. This number is about half of the desirable quota in relation to the typhoid death rate.

Worcester County has a commendable record of freedom from smallpox for many years. Fortunately, vaccination of school children is compulsory.

The County is participating in the special state-wide pneumonia control program, and progress is apparently being made in securing early diagnosis and more prompt treatment of cases than heretofore.

Laboratory service to assist physicians in the diagnosis of cases of communicable diseases and to facilitate the work of the health department

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* See footnote Page 24.

is provided in a branch laboratory of the State Department of Health located at Salisbury. In 1939, there were 254 specimens examined for typhoid and paratyphoid fever, 50 for diphtheria (389 nose and throat cultures chiefly for streptococci), 44 for undulant fever, 33 for typhus fever, 7 for tularemia, beside 24 specimens for pneumonia typing.

The public health nurses, working on a district basis, render valuable services in the educational and follow-up work associated with the control of communicable diseases. In 1939, there were 184 home visits made for this purpose besides 117 visits made in behalf of the families in which communicable disease was a problem. Nurses also carry a heavy responsibility in the supervision of cases of ophthalmia neonatorum, especially in view of the lack of accessible hospital facilities for caring for such cases. The nursing staff is inadequate to provide for routine home visits in behalf of cases of measles and whooping cough, although such services are desirable, especially for educational purposes and for emphasis regarding the proper care of cases and the prevention of serious after effects of these diseases.

Three of the 10 cases of typhoid fever occurring in the County in 1939 were hospitalized in Salisbury. These were the only known cases of communicable disease given hospital care.

A program of community health instruction in regard to communicable diseases is gradually being developed. A total of 47 lectures and talks on public health were given in 1939. Newspapers cooperate in publishing articles dealing with this problem, and 10 or more such articles were published

in local papers last year. In addition to information released locally, several articles from the State Department of Health were published.

In summary it may be stated that practices for the control of communicable diseases in the county receive a rating on the Appraisal Form of the American Public Health Association of 60 percent. The chief losses are due to the incompleteness of reporting, to the lack of spot maps and chronological tabulations showing the current prevalence of diseases, to the low proportion of preschool children immunized against diphtheria, and to the lack of nursing follow-up service for cases of measles and whooping cough. Commendable progress is being made, however, in the development of facilities and services to meet most of these needs. This is only one of the several problems which indicate the need for an increase in trained public health nursing service.

Syphilis and Gonorrhea. Reporting of cases of syphilis and gonorrhea has gradually improved during the past two years as shown by the following figures -

Reported Cases of Syphilis and Gonorrhea

	1937	1938	1939
Syphilis	184	282	307
Gonorrhea	21	32	40

These cases are reported by name and address to the local or the State Health Department. It is obvious that reports of cases of gonorrhea are still quite incomplete. Furthermore, it is also found that the proportion of the cases of syphilis reported in the early stages of the disease, although higher than in most parts of the state, is much lower than is desirable.

The principal activities for the prevention and control of syphilis and gonorrhea are the venereal disease clinics, with follow-up service, conducted jointly by the State and the County Health Department, the provision of free drugs for all patients including cases of private physicians, the treatment of indigent cases with drugs supplied free by the State Department of Health, the provision for blood tests and other examinations in the branch State Laboratory, and the provision of transportation for many cases receiving treatment. Three evening clinics are held each week in the county, one in Pocomoke City, one in Snow Hill, and one in Berlin. During 1939, a clinic was also conducted in Stockton. In view of the serious problem of transportation, a bus service has been provided for this purpose. Epidemiological investigations of cases and contacts are carried out. Lapsed clinic cases are reported to the health officer, who also assists the physicians employed on a part-time basis for clinic work, and cards are sent out requesting them to return for treatment. Cases who do not respond are visited by the nurse. In private practice, relatively few reports are made to the health department of potentially infectious cases who discontinue treatment.

There were 208 clinic sessions held in 1939, with 385 cases accepted for treatment and 7892 visits made to all clinics. Of the 241 new cases of syphilis admitted, 4.5 percent were diagnosed as congenital, while 19.5 were in the primary or secondary stage of disease, the remaining 76 percent being classed as latent and tertiary cases. A study was made of 302 syphilis patients who became inactive in the clinics during the calendar years 1938-39. Of this number, however, 74, or 25 percent, had attended for a reasonably desirable period of 40 weeks or longer. Of the remainder, 39, or 12 percent, were cases classed in the primary or secondary stages of the disease upon

admission; twenty-five of these cases attended clinic for a period of less than 20 weeks. Follow-up service for delinquent cases is especially important for early cases, and the health department is rendering active service in this regard.

The following tabulation indicates the services rendered in 1939 -

Treatment Services by Clinics, 1939					
	Pocomoke City	Stockton	Snow Hill	Berlin	Total
Number of old Cases Accepted					
Syphilis	79	47	84	149	359
Gonorrhea	7	1	3	10	21
Chancroid	1	0	4	0	5
New Cases Accepted					
Syphilis	47	42	61	91	241
Gonorrhea	7	1	3	10	21
Chancroid	1	0	4	0	5
Total Clinic Visits	2206	1378	1629	2679	7892

The number of treatments per case of syphilis during the year averaged 18, while the number of treatments per case of gonorrhea averaged nearly 4.

Personnel and equipment are available for making darkfield examinations at the clinic and 29 such examinations were made in 1939. Facilities are also available for making spinal fluid examinations.

When a patient moves out of the district, insofar as possible, a complete record of treatment provided to clinic cases is sent to the health officer in the area to which the patient goes in order that treatment may be satisfactorily continued. This is a highly desirable practice.

Among 236 patients beginning treatment in 1939, there were 178 familial contacts reported. Of these, 79 were located and examined and 50 of the 55 found to be infected were placed under treatment. In addition,

there were 133 extra-familial contacts reported during the year, of whom 75 were examined; 62 were found to be infected and 58 of them were placed under treatment. This is a very important section of the work to facilitate control measures as early and successfully as possible.

In the State Laboratory, during 1939, there were 1749 blood tests made for diagnosis of syphilis, and 100 smears examined for gonorrhea.

Community health instruction in regard to these diseases has only been partially developed. Three talks on this subject were given during the year with an attendance of 185. Five newspaper articles were printed locally. While many pamphlets dealing with syphilis and gonorrhea were distributed, there may be an opportunity to extend this educational service in a timely manner.

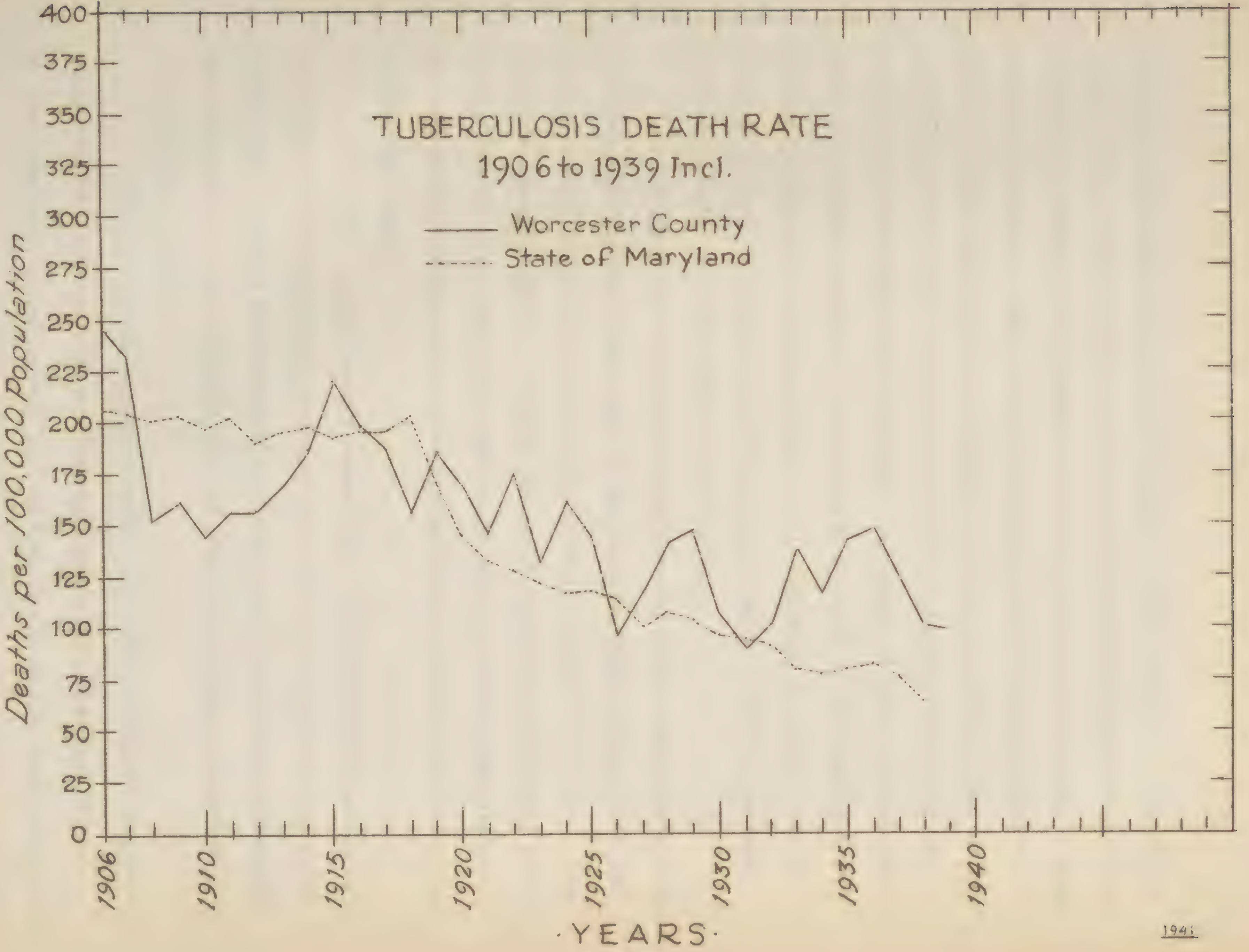
During three months in the first quarter of 1940, an epidemiologist from the State Department of Health spent a large portion of his time in the county and rendered valuable assistance in the further development of this program and in the analysis of results.

In summary, it may be said that the county is fortunate in having a well developed program with three active clinics, while a large amount of follow-up service is provided. The rating of 63 out of a possible 100 points on the Appraisal Form for the services rendered in 1939 fails to indicate the large amount of constructive work required for the development of the well organized program being provided in 1940. Special credit is also due the health officer for the large amount of time spent in the development of the effective clinic program, staffed by local physicians, health department nurses and clerks, in addition to his many other duties.

Tuberculosis. Tuberculosis, in Worcester County, is a major cause of death, of incapacity, of family breakdown, and of social dependency. As a cause of death, this disease, on the average, during each of the past five years was exceeded only by heart disease, nephritis, and cerebral hemorrhage. Of new cases reported in 1939, numbering 45, tuberculosis was exceeded by scarlet fever (54), pneumonia (58), and syphilis (307). There were five cases of pulmonary tuberculosis and 2 of other forms reported after death. There are 77 known living cases of tuberculosis among Worcester County residents on the active register maintained by the health department. Judging from experience elsewhere, however, it may be conservatively estimated that there are over 100 active cases and more than 300 contacts of the disease in the county. In 1939 there were 90 contacts of new cases reported to have been examined, or about two-thirds of the desirable number according to experience over the country. On the basis of data obtained from studies of costs of this disease, it may be estimated that the cases of tuberculosis in the county will eventually cost someone over $400,000.

There is systematic reporting to the health department of cases returned to the area from state or other sanatoria. Epidemiological investigations is made of reported cases; but many cases come to professional attention or are reported late in the stage of the disease.

One of the essential elements of a county tuberculosis program is the clinic service. Tuberculosis clinics are held in the forenoon once a month, usually on a rotation basis, in Pocomoke City, Snow Hill, and Berlin, by the Superintendent of the Maryland State Sanatorium, located at Pine Bluff. He is paid on a clinic fee basis by the Maryland Tuberculosis Association. This arrangement for clinic service seems practical, especially as a large proportion of the white cases from the county are cared for in this sanatorium,



TUBERCULOSIS DEATH RATE
1906 to 1939 Incl.

1941

There were 205 cases registered at clinics in 1939 as having made 298 clinic visits. While the number of cases registered is reasonably satisfactory, the frequency of visits is low, perhaps due in part to the acute problem of transportation for clinic cases. X-ray examinations, one of the most important factors in case finding and early diagnosis, last year numbered 247. It is gratifying to note that a quarter of the clinic cases were classed in the minimal stage of disease when diagnosed. The number of cases of tuberculosis among the colored population is very high in relation to the proportion of colored in the total population. Hence it is important to provide adequate nursing, clinic, and institutional facilities, coupled with vigorous case finding measures, for this group in the county.

A study of 38 recently diagnosed cases of active tuberculosis carried by the health department shows that 37 were visited within one month of the date of report, while the other patient was visited within two months. This is a good record of service. Physicians do not always wish the health department to visit a case, and it has been the practice to leave responsibility for educational work and other necessary provisions in such cases to the attending physician.

In 1939, the nurses registered 104 cases and made 518 home visits to cases of tuberculosis in addition to 324 visits of various kinds in behalf of patients. Because of the pressure of other duties, many cases discharged from sanatoria are not visited within one month of discharge, although this is a desirable practice.

The total hospital patient days for cases from Worcester County numbered 8181 in 1939,-a high and favorable experience. Fourteen of the 22 cases admitted to institutions went to Pine Bluff, four to Henryton (colored),

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[illegible] of disease when they occur. The number of cases of tuberculosis [illegible] volved in the total population. Hence it is important to provide adequate [illegible] finding resources, for this group in the county.

A study of 38 recently increased cases of active tuberculosis dis- [illegible]

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three to Sabillasville, and one to Mt. Wilson Sanatoria. Seven of these cases were classed as minimal at the time of admission. Ten of the cases were hospitalized within two months of the time they were reported to the health department. Of 24 cases discharged, 5 left the institution against advice. In 1939, there were 44 different patients from the county in sanatoria.

Laboratory services are provided in the branch of the State Laboratory located in Salisbury, where 337 specimens for tuberculosis diagnosis were examined in 1939.

Community health instruction in regard to the problem of tuberculosis, in addition to the personal contacts of physicians and nurses, is gradually being developed. In local newspapers, 37 articles were published last year, and many pamphlets supplied by the Maryland Tuberculosis Association were distributed. There is a local tuberculosis association, affiliated with the Maryland Tuberculosis Association, which assumes, with the aid of the health officer, responsibility for the Seal Sale. In 1939, the amount of the Seal Sale, of $1058, was $185 more than in 1938; and the gradual increase in this activity is gratifying. Some $600 were available for direct tuberculosis control work in the county in addition to the clinic service. Excellent cooperation exists between the State and County Tuberculosis Association and the County Health Department.

In summary, the tuberculosis control activities in Worcester County have been extended during the past two years, and in 1939 received a rating

of 74 percent on the Appraisal Form. The chief losses in appraisal point to the need for: (a) increased case finding activities, especially among contacts, (b) for finding some way to stimulate more frequent attendance at clinics (although it is recognized that a large proportion of cases are hospitalized shortly after diagnosis is established), and (c) for extending public health nursing services as soon as the staff can be increased. Tuberculosis mortality in this county is excessive and the control of this disease requires vigorous measures with the cooperation of all individuals and agencies (educational, health and welfare) in the county and with assistance from appropriate state agencies.

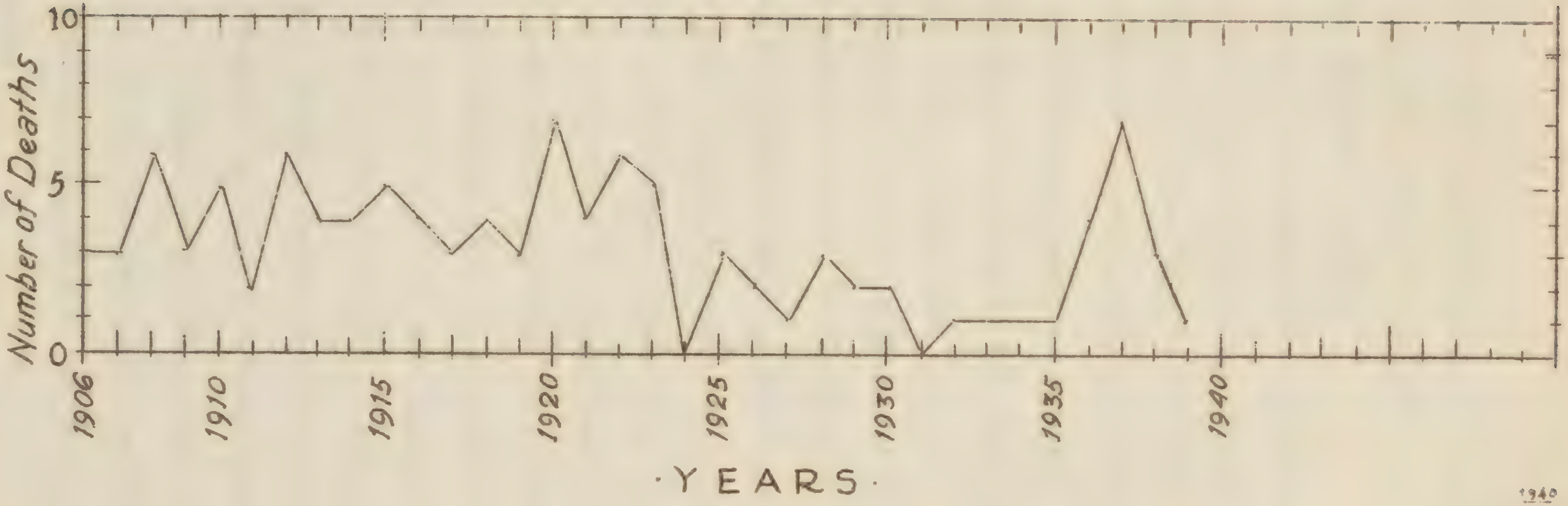
Maternal and Child Health

Historically, health departments turned their attention to the hygiene of the individual as the control of communicable diseases became less pressing. They began with an attack on infant mortality. Programs for school health were developed as problems of nutrition, dental care and the extent of physical defects were discovered in the school age group. Programs were later developed to improve the health conditions of pregnant women to prevent maternal mortality, and to foster the health and well-being of the unborn child and the growing family. Four activities are thus common to most health departments: promotion of the hygiene of the mother, the infant, the preschool child, and the school age child.

In 1939, there were 413 live births and 18 stillbirths, 54 or 12.5 percent occurring in hospitals - outside of the County. While the hospitals in which most of these deliveries occurred are registered, they are not on the approved list of the American Medical Association Council of Medical Education and Hospitals. Not only is there no hospital in the County, but there is also no organized nursing service at time of delivery. These factors are likely to throw additional burdens and demands on the already overburdened staff of the health department.

Records indicate that 136 births were attended by licensed midwives and 11 by others. The percentage of deliveries by midwives is over three times as high as the average for the counties of the State and five times as high as the average for the State if Baltimore is included. Midwives are registered in the County and are given field supervision by nurses, including midwife classes and check-up of equipment and methods.

ACTUAL NUMBER OF PUERPERAL DEATHS
WORCESTER COUNTY
1906 to 1939 Incl.



1940

A consulting nurse-midwife is provided by the State Health Department on request. Early in 1940, she spent a month in the area, dividing her time between Wicomico and Worcester Counties.

Three afternoon clinics for prenatal care are held monthly, one each in Pocomoke City, Snow Hill, and Berlin, and one was held less regularly in 1939 in Stockton. The location of these clinics is central, but unfortunately the clinic in Pocomoke City, which is one of the best equipped, is located on the third floor of a building without an elevator. An obstetrical consultant from Johns Hopkins Hospital now visits the county every two months, always attending the prenatal clinic in Snow Hill.

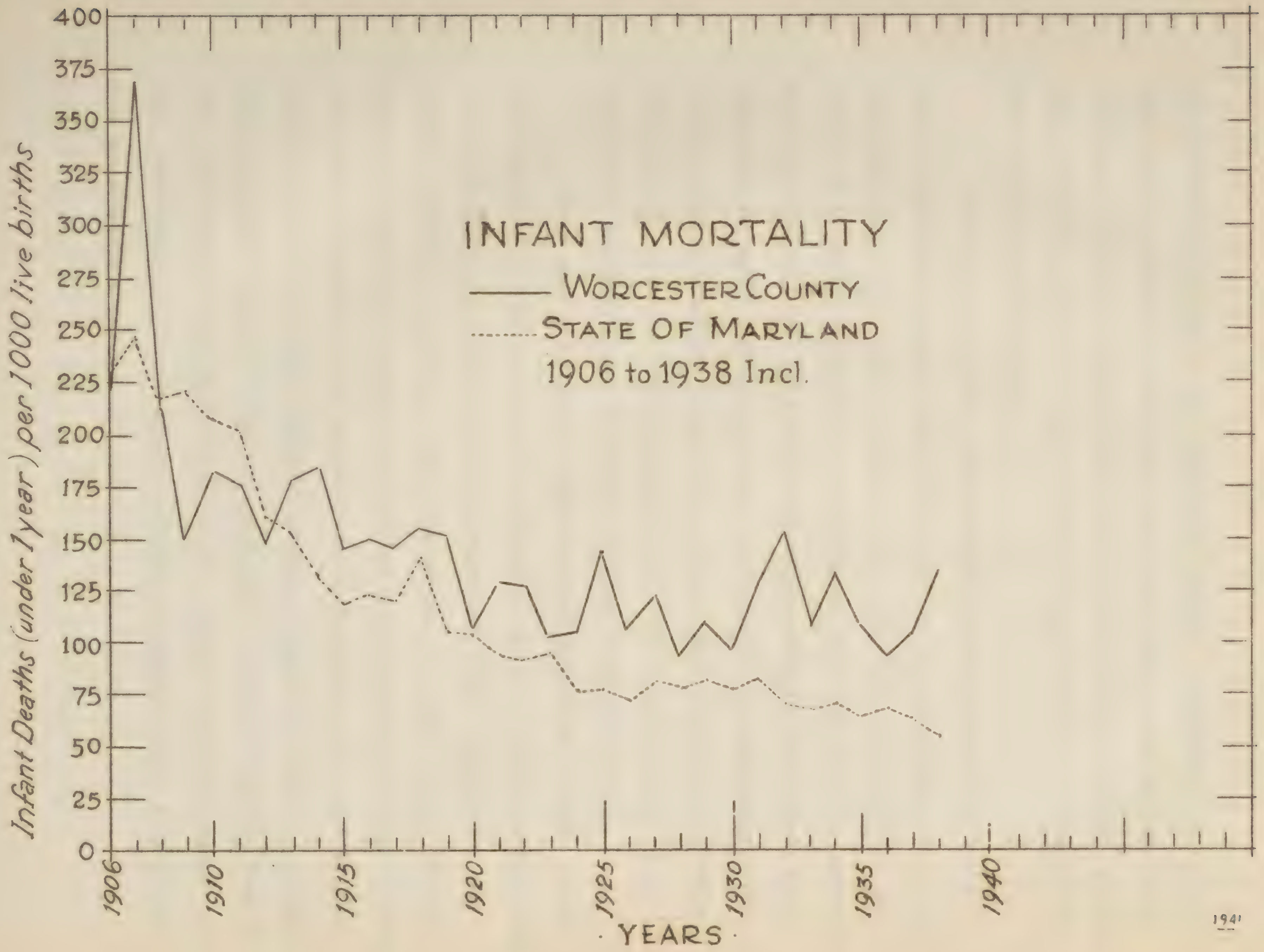
The 175 cases registered in prenatal clinics during 1939, the largest number being in Berlin, made 434 visits - or averaging 2.5 visits per case, about half of the desirable average number of visits. Eight percent of the cases were registered before the fourth month, and an additional 51 percent before the sixth month. The taking of blood tests is a routine procedure in these clinics, and 32 percent were found positive for syphilis. This is a high proportion of cases having syphilis. It is unfortunate that 11 of these cases found to have syphilis could not have been brought under the efficient treatment given in the venereal disease clinics. Early treatment of syphilitic pregnant women is effective in preventing congenital syphilis. In December of 1939, prenatal dental service was begun for needy cases by the school dentist employed by the State Health Department and partly financed by the county. Nineteen dental examinations were made in 1939; treatments were given to all but five who refused to benefit from this care. This service will be available only half of the year - the time the school dentist is in the county.

Field nursing service was rendered to 160 prenatal cases in 1939, representing 37 percent of those in the county. A total of 493 home visits besides 297 visits elsewhere in behalf of the cases were made. Thirty-seven percent of these cases were registered before the sixth month of pregnancy. Blood pressure readings, in accordance with generally accepted good practice, are taken by the nurses upon home visits, and urinalyses are made. In addition, these examinations and tests are routinely made in the clinics.

There were 185 postpartum cases registered with the nurses in 1939 as having received 275 home visits. While the number registered is reasonably satisfactory, the frequency of visits is lower than desirable on the average. Only twenty percent of these cases were visited within 48 hours after delivery, and about the same proportion received two visits within 10 days.

The health officer and the nurses have analyzed the infant deaths and stillbirths occurring in 1939 as one index of the extent of medical and nursing supervision of the families which the health department was able to render. Only 19 percent of the mothers experiencing stillbirths or deaths of the infant during the first month of life attended prenatal clinic; only 14 percent of the mothers in the latter group received home nursing visits, and then to only a very limited extent. Of mothers whose babies died after the first month of life, 39 percent were visited, but less than half of the cases received as many as two visits. On the other hand, one of these families received thirteen and another eighteen visits. The need for wider prenatal nursing supervision is indicated.

Another study of records of 346 infants born in the county, not including those who died, shows that 55 percent of these infants were visited


INFANT MORTALITY
WORCESTER COUNTY
STATE OF MARYLAND
1906 to 1938 Incl.
Infant Deaths (under 1 year) per 1000 live births
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
1906
1910
1915
1920
1925
1930
1935
1940
· YEARS ·
1941

and received an average of 4.14 visits per infant. Furthermore, it is gratifying that 47 percent of these infants who were visited were seen during the first week of life; 80 percent being visited during the first month. A fairly intensive service, with early supervision, is thus rendered the infants whom the nurses are able to reach.

During the year 1939 there were 131 infants registerd at child health conferences as having made 227 visits. In view especially of the high infant mortality rate, there is apparent need for a more comprehensive program of child health conferences in the county. This fact is again emphasized when it is observed that only 247 preschool age children (15 percent) were registered as having made 312 visits to conferences. The Healthmobile of the State Health Department spent 8 days in the county in 1939, and examined 275 children. No defects were reported for 135 of these children. The remainder were followed up by the nurses to secure corrective work.

There were 314 infants registered with the nurses in 1939, as having received 1227 home visits and 174 reference visits. This is an invaluable service, but the frequency of visits averages only about two-thirds of the desirable number. In addition, 108 preschool age children (but less than 7 percent of those in the county) received 367 home visits and 171 other (reference) visits in behalf of the children under supervision. The medical consultant on infant and child health of the State Department of Health is available upon request to aid with special problems. A nutrition advisor from the State Department is also available and spends several days in the county each year. The county is also fortunate in having as health officer a physician with considerable experience and training in pediatrics.

There has been considerable activity in the county in community health instruction as related to maternity and infancy; pamphlets have been distributed, talks have bean given, and the newspapers have cooperated. The visit of the Healthmobile is also a useful seasonal educational measure.

The low appraisal scores of 69 percent for maternity hygiene and 45 percent for infant and preschool care are due to the lack of personnel and facilities in the county to do as extensive a job as would be desirable and highly fruitful in view of the excessive infant mortality rate. The high incidence of diarrhea and enteritis is an illustration of one of the important problems. The work that is being done is on a high level of effectiveness, but it needs extension as indicated, especially for increased nursing service and for active development of child health conference services. Even recognizing that a fairly large volume of child health service may be rendered by physicians, there remains a very large number not reached by doctors or nurses until an acute emergency arises. There are certain sections in the county needing special study because of the unusual incidence of infant disease problems among both white and colored. Seventy percent of the stillbirths and 61 percent of the infant deaths were among colored persons, although the proportion of the colored population is roughly half of these ratios. The State Department of Health, Bureau of Child Hygiene has recognized that the problems of the county in maternity and infancy care need vigorous measures and has consequently given more aid in personnel than is usually provided in comparision with the amount of responsibility assumed by a county. Under the present able leadership, and with increasing county support, this major burden should soon begin to grow lighter to the satisfaction of the citizens, taxpayers, and professional workers alike.

School Health. In a previous section were discussed the factors relating to school sanitation. It is our purpose here to consider those aspects of the school program which relate primarily to the physical status of pupils and teachers. All of these factors naturally bear an important relationship to the mental hygiene atmosphere of the schools, which naturally influences the mental growth and development of the children.

According to data kindly furnished by the Superintendent of Schools, there are some 4031 school pupils enrolled in the county, classified as follows:

	Public Schools		
	Elementary	High	Total
White	1816	771	2587
Negro	1181	263	1444
Total	2997	1034	4031

While there is no organized program for the health examination of pupils of selected grades each year, 301 pupils were given medical examinations, and 450 were given dental examinations in 1939. However, it should be pointed out that provision has been made for testing of vision and of hearing, annually, according to modern procedures, and including in the near future for hearing tests the use of the audiometer. A study of loss of hearing among school pupils in 1940, showed that 533 out of 697 tested, or 77 percent, had normal hearing; 154 showed loss of hearing of less than 15 percent, and 10 showed a loss of hearing above 15 percent. In one of the school districts where the nurse supervised vision testing of 590 pupils, using the Snellen Test, 90 children, or 17 percent were found to have defective vision in marked degree and should be examined by an ophthalmologist. These tests are needed for all school pupils.

If the child is to benefit from the regular educational facilities, he needs to see and to hear as well as possible; and furthermore, handicapping defects, if present, should be discovered and corrected as early as possible and before they may pass a stage which may lead to permanent handicaps. There is also needed a health program for high school pupils.

Dental examinations are made of children in the first three grades. State records indicate that 53 clinics were held in the county when 116 children were treated in 1939. It should be noted that the 1938-39 program was completed in February and the 1939-40 program began in December of 1939. Parents sign a permit for such work, and a charge of one dollar is made for the service rendered each child. The dentist is authorized to do the work free if the local Parent-Teacher Association or a responsible group indicates that the child comes from an indigent family. Not all colored schools are served, however. Some work has been accomplished for preschool children on Saturday mornings. And, as previously indicated, with the help of the State Bureau of Child Hygiene, a prenatal dental program has been launched.

Three orthopedic clinics a year are conducted by a clinician employed by the State Department of Health. In 1939 a total of 30 new cases of crippled children were reported, 6 were brought under treatment; 32 were admitted to nursing service and received 53 home visits besides the 59 visits made by the children to diagnostic clinics.

Data kindly furnished by the Maryland League for Crippled Children show the registration of known cases as of May 1, 1940 -

Crippled Children in Worcester County

Age Groups:	1 to 5 yrs.	6 to 10 yrs.	11 to 15 yrs.	16 to 21 yrs.	Total
White	15	21	19	16	71
Colored	10	2	9	5	26
Total	25	23	28	21	97

Crippled Children in Worcester County

Location and Color

Location	White	Colored
Girdletree	3	0
Newark	1	5
Snow Hill	13	2
Berlin	20	7
Stockton	3	2
Pocomoke	25	3
Bishop	1	1
Whaleysville	4	2
Showell	0	3
Johnson's Neck	0	1
Ocean City	1	0

Records of the State Department of Health show that 14 patients were hospitalized in 1939 at a cost of $3803, plus $116 for appliances.

Mental hygiene clinics, largely for work with children, were re-established in 1940 by the Maryland Society of Mental Hygiene, with a psychiatrist and a psychiatric social worker in attandance. The psychologist of the Society occasionally also participates in the work. This is a valuable service which should be extended with the participation of the education, health and welfare agencies participating in a joint plan.

A very interesting and constructive study of nutrition problems in schools has been conducted, through the cooperation of the schools, the health department, and the Parent-Teacher Association. The final results of this study should be useful in planning the future program of health education and nutrition. Already, the preliminary results have been used in a constructive manner for the benefit of pupils and the interest of teachers and other professional workers. There are many problems of nutrition in the county which

need continuing attention. These place considerable responsibility on the public health nurses, the welfare workers, and school personnel.

Previous reference has been made to the work of the health department for the control of communicable diseases among school pupils, including diphtheria immunization and smallpox vaccination. Public health nurses made 161 home visits and 338 reference visits in behalf of school pupils.

Classroom teachers in all schools do not have access to cumulative health record cards showing the child's health history since entering school. Nor do the classroom teachers have records of causes of absence. New health record cards have been prepared for the high schools. The teachers are supplied with a booklet of Instructions for the Control of Communicable Diseases supplied by the State Department of Health. Several of both the white and colored schools have active parent organizations.

In considering the future development of the school health program, which now scores 30 percent on the Appraisal Form, consideration may well be given to closer integration of school health services and health education, to increased health education work in high schools, and to a more comprehensive program of health examinations and follow-up service. The close working relationships between the school department and the health department are commendable.

Problems of Medical Service

As previously noted at the beginning of this report, there is an important problem in the county of securing necessary medical and especially hospital services promptly for certain types of cases. Inasmuch as the health [illegible] responsibilities of the public health nurses, the welfare workers, and school personnel.

[illegible] has not been made to the work of the [illegible] the control of communicable diseases among school pupils, including diphtheria immunization and smallpox vaccination. Public health nurses made [illegible] home visits and 388 referred visits in behalf of school pupils.

[illegible] all schools do not have access to cumulative health record cards showing the child's health history since entrance [illegible] but do the classroom teachers have records of causes of absence. [illegible] record cards have been prepared for the high schools. The teachers are [illegible] plied with a booklet of Instructions for the Control of Communicable Diseases supplied by the State Department of Health. [illegible] of both the white and colored schools were active in [illegible].

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department is an official county agency which must assume responsibility for certain indigent cases, including several prenatal and obstetrical cases and communicable disease cases, the county health department should be given authority to secure the necessary medical and hospital care for a case when indicated. The present plan often involves delay because of the time required in clearing cases with the County Commissioners and places the health officer in a very unfortunate and discouraging position. Furthermore, the basis of arrangement for medical care by the welfare department involving the payment of medical services through the patient has often proved unsatisfactory.

Public Health Nursing

In previous sections, the valuable work of the four public health nurses in the county has been discussed. There are 4 nurses for a population of some 22,000 people, or one nurse to 5500. This ratio gives each nurse a task almost three times as large as an ideal. Furthermore, it should be pointed out that there is no trained and experienced nursing supervisor to assist the staff nurses in correlating and planning the work on a comprehensive basis or to serve as a consultant always at hand. Consulting service is rendered so far as practicable by the director of nurses of the State Department of Health, but this does not take the place of a supervising staff member who is constantly available. The provision of a well equipped supervising nurse is perhaps the greatest need in the county for strengthening the public health program.

Public health nursing has come to be recognized not as an expense but as an investment that pays large dividends in the saving of human lives

and the prevention of suffering. It has been well said that no community can afford not to spend the money for this type of health worker. One of the functions of a public health nursing program is instruction in the techniques of nursing care of the sick in the home, and the giving or securing of such care when necessary in accordance with the medical instructions of the attending physician; with assistance in securing special care for patients having special types of disease, such as orthopedic, arthritic, and cardiac conditions, diabetes and cancer, and in securing convalescent care. The nursing load in the county is too great to permit of the bedside nursing care needed. This is a very important problem in the county.

Enormous credit is due the staff nurses for the program being actively carried on. A time study conducted by the nurses in November of 1939, showed that on the average, 34 percent of the time was spent in home visits, 27 percent in travel, 16 percent in clinics, 17 percent in office work, and the remainder in miscellaneous duties. The study also revealed that overtime is not uncommon. Were there more clerical assistance, perhaps the office time could be slightly reduced, although this figure is not out of line with general experience elsewhere. In a county of this size, much time is required for travel. To meet the large problems many of them greater than the average, (e.g. infant mortality and tuberculosis), efforts should be made to increase the nursing staff, and dividends would be returned many times in the reduction of unnecessary illness.

Furthermore, attention should be called to the lack of bedside nursing care and to care of cases at the time of delivery.

The nursing time study also showed the distribtuion of nursing visits by types of services as follows:

Service visits	Percent of time
Communicable diseases	6.5
Syphilis and gonorrhea	8.9
Tuberculosis	7.7
Maternity	12.3
Child Hygiene	28.5
School	18.7
Morbidity	10.2
Crippled Children	4.1
Collection of specimens	3.0
	99.9

Although there are variations, to be expected, between the various services of the different nurses, the average distribution of services corresponds with what would seem desirable in general. Increased emphasis on maternity visits would seem worthy of consideration. But it is difficult to suggest any point which might be curtailed. Continuing study of this problem by each nurse, bearing in mind the individual needs of cases under supervision and their relative importance, seems to be the only immediate answer.

The nurses are relieved of much of the social service work which sometimes presses for attention, because there are 5 social workers in the county. Cooperation between the nurses and the social workers, with occasional conferences is essential. Because of the important problem of transportation, the nurses are unable to carry on as much group instruction as is sometimes feasible. Home visits are essential even though time consuming.

The county and the state are making a sound investment in the public health nursing in the county, but the county should plan for the gradual assumption of increasing responsibility in the provision of this essential service for the benefit of the citizens and the taxpayers.

Summary and Conclusions

Worcester County has a well organized and ably administered county health department with a loyal and energetic staff. The county has gradually assumed increasing responsibility for the conservation of the health of its people during recent years. Enormous progress has been made during the past two years. A large proportion of the health department budget is derived from State and Federal funds. The county should plan to assume a much larger share of this budget in the not far distant future, and to secure as soon as possible a well qualified supervising nurse, at least one more staff nurse, an additional clerk, part-time, and some increase in medical assistance for the health officer. The sanitation program should be strengthened. The county also should plan for more adequate housing facilities for the department. In view of the fact that the success of the public health program and the advancement of the school health and nutrition programs depends so much on the participation of the public in various aspects of these programs, the extension of activities of public health education should be early considered. To assist in this important work, there is needed a supervisor of health education who has had considerable training and experience in education and public health.

This report has endeavored to outline existing health problems, to emphasize certain gaps, and to suggest some of the future lines of development. It is hoped that this critical review may be helpful in future program planning during the next five years.

Harlan